

CLAIMS

What is claimed is:

1. A data storage device, comprising:

a first housing section comprising a first recess on an interior surface of said first housing

5 section;

a second housing section interconnected with said first housing section;

a first port that extends from an exterior surface of said first housing section to said first
recess;

a computer-readable storage medium disposed between said first and second housing
10 sections; and

a filter assembly comprising a breather filter section and a recirculation filter section,
wherein said breather filter section extends within said first recess.

2. A data storage device, as claimed in Claim 1, wherein:

said first housing section is a base plate.

15 3. A data storage device, as claimed in Claim 1, wherein:

said breather filter section is disposed in a first orientation and said recirculation filter
section is disposed in a second orientation that is different from said first orientation.

4. A data storage device, as claimed in Claim 1, wherein:

said breather filter section is disposed at least generally parallel with said computer-
20 readable storage medium, and wherein said recirculation filter section is disposed at least
generally perpendicular to said breather filter section.

5. A data storage device, as claimed in Claim 1, wherein:

said breather filter section and said recirculation filter section are disposed within a common packaging.

6. A data storage device, as claimed in Claim 1, wherein:

5 said filter assembly comprises a hinge between said breather filter section and said recirculation filter section.

7. A data storage device, as claimed in Claim 1, wherein:

said filter assembly is a laminated structure.

8. A data storage device, as claimed in Claim 1, wherein:

10 said breather filter section comprises an absorbent, and wherein said recirculation filter section in comprises an electrostatic filter media.

9. A data storage device, as claimed in Claim 1, wherein:

said filter assembly comprises a packaging, and wherein said data storage device comprises an adhesive disposed about at least part of said breather filter section between said
15 packaging and said first housing section and disposed entirely beyond said breather filter section.

10. A data storage device, as claimed in Claim 1, further comprising:

a first annular seal between said filter assembly and said first housing section, wherein an entirety of said breather filter section is located inwardly of said first annular seal.

11. A data storage device, as claimed in Claim 1, wherein:

20 said breather filter section is at least generally flush with a perimeter portion of first housing section that is disposed about said first recess.

12. A data storage device, as claimed in Claim 1, wherein:

said breather filter section comprises a top surface, a bottom surface, first and second sides, and first and second ends, wherein said first and second sides extend at least generally toward each other progressing from said first end to said second end, wherein said second end is closer to a rotational axis of said computer-readable storage medium than said first end.

13. A data storage device, as claimed in Claim 12, wherein:

said breather filter section is disposed under said computer readable storage medium, wherein said first end is at least generally parallel with an adjacent perimeter portion of said computer-readable storage medium.

14. A data storage device, as claimed in Claim 1, wherein:

said breather filter section is at least generally wedged-shaped in plan view.

15. A data storage device, as claimed in Claim 1, wherein:

a space separates said first housing section and a portion of said breather filter section that faces said first housing section.

16. A data storage device, as claimed in Claim 1, wherein:

a perimeter of said breather filter section fails to extend beyond a perimeter of said first recess.

17. A data storage device, as claimed in Claim 1, wherein:

said first housing section comprises a perimeter-defining side wall and a base that define said first recess, wherein said breather filter section is separated from said base by a first space, and wherein an annular second space is disposed between said breather filter section and said perimeter-defining side wall.

18. A data storage device, as claimed in Claim 1, wherein:

said first housing section comprises a perimeter-defining side wall and a base that define said first recess, wherein said breather filter section is spaced from said base and is further spaced inwardly from said perimeter-defining side wall.

19. A data storage device, as claimed in Claim 1, wherein:

said filter assembly comprises a packaging, wherein said breather filter section comprises a filtering media, wherein said packaging comprises first and second packaging sections disposed on opposite sides of said filtering media, wherein said filter assembly is installed such that first packaging section is disposed between said first housing section and said filtering media, and wherein said first and second packaging sections have a different permeability.

20. A data storage device, as claimed in Claim 19, wherein:

said second packaging section has a larger permeability than said first packaging section.

21. A data storage device, comprising:

a first housing section;

a second housing section interconnected with said first housing section;

5 a first port that extends from an exterior surface of said first housing section to an interior surface of said first housing section;

a computer-readable storage medium disposed between said first and second housing sections; and

a filter assembly comprising a breather filter section and a recirculation filter section within a packaging comprising first and second packaging sections, wherein said breather filter
10 section is disposable within a flow between an interior and an exterior of said data storage device, wherein said recirculation filter section is disposable within a flow totally contained within said interior of said data storage device, wherein said breather filter section comprises a filtering media disposed between said first and second packaging sections, wherein a flow may be directed through each of said first and second packaging sections to reach said filtering media
15 of said breather filter section, wherein said first packaging section is disposed between said first housing section and said filtering media, and wherein said first and second packaging sections have a different permeability.

22. A data storage device, as claimed in Claim 21, wherein:

said first housing section comprises a first recess;

20 said first port extends from said exterior surface of said first housing section to said interior surface of said first housing section within said first recess; and

said breather filter section extends within said first recess.

23. A data storage device, as claimed in Claim 22, wherein:

said first housing section is a base plate.

24. A data storage device, as claimed in Claim 22, wherein:

a space separates said first housing section and a portion of said breather filter section

5 that faces said first housing section.

25. A data storage device, as claimed in Claim 22, wherein:

said first housing section comprises a perimeter-defining side wall and a base that define
said first recess, wherein said breather filter section is spaced from said base and is further
spaced inwardly from said perimeter-defining side wall.

10 26. A data storage device, as claimed in Claim 22, wherein:

said base plate comprises a perimeter-defining side wall and a base that define said first
recess, wherein said breather filter section is separated from said base by a first space, and
wherein an annular second space is disposed between said breather filter section and said side
wall.

15 27. A data storage device, as claimed in Claim 22, further comprising:

a first annular seal between said filter assembly and said first housing section that is
disposed about said first recess, wherein an entirety of said breather filter section is located
inwardly of said first annular seal.

28. A data storage device, as claimed in Claim 22, wherein:

a perimeter of said breather filter section fails to extend beyond a perimeter of said first recess.

29. A data storage device, as claimed in Claim 22, wherein:

5 said breather filter section is at least generally flush with a perimeter portion of first housing section that is disposed about said first recess.

30. A data storage device, as claimed in Claim 21, wherein:

said breather filter section is disposed in a first orientation and said recirculation filter section is disposed in a second orientation that is different from said first orientation.

10 31. A data storage device, as claimed in Claim 21, wherein:

said breather filter section is disposed at least generally parallel with said computer readable storage medium, and wherein said recirculation filter section is disposed at least generally perpendicular to said breather filter section.

32. A data storage device, as claimed in Claim 21, wherein:

15 said filter assembly comprises a hinge between said breather filter section and said recirculation filter section.

33. A data storage device, as claimed in Claim 21, wherein:

said filter assembly is a laminated structure.

34. A data storage device, as claimed in Claim 21, wherein:

20 said breather filter section comprises an absorbent, and wherein said recirculation filter section in comprises an electrostatic filter media.

35. A data storage device, as claimed in Claim 21, further comprising:

an adhesive disposed about at least part of said breather filter section between said packaging and said first housing section and disposed entirely beyond said breather filter section.

36. A data storage device, as claimed in Claim 21, wherein:

5 said breather filter section comprises first and second sides and first and second ends, wherein said first and second sides extend at least generally toward each other progressing from said first end to said second end, wherein said second end is closer to a rotational axis of said computer-readable storage medium than said first end.

37. A data storage device, as claimed in Claim 36, wherein:

10 said breather filter section is disposed under said computer readable storage medium, wherein said first end is at least generally parallel with an adjacent perimeter portion of said computer-readable storage medium.

38. A data storage device, as claimed in Claim 21, wherein:

said breather filter section is at least generally wedged-shaped in plan view.

15